IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A method for generating a computer readable code to be embedded in a predetermined content, comprising the steps of:

calculating a plurality of residues, taking a plurality of integers which are relatively prime to each other, as moduli, with respect to a user identification number of a user who uses the content;

generating a plurality of computer readable component codes respectively expressing the residues obtained in the residue calculating step; and

concatenating the computer readable component codes generated in the computer readable component code generating step, thereby to generate the computer readable code to be embedded.

2. (Currently Amended) A unit for generating a computer readable code to be embedded in a predetermined content, comprising:

residue calculating means for calculating a plurality of residues, taking a plurality of integers which are relatively prime to each other, as moduli, with respect to a user identification number of a user who uses the content;

computer readable component code generating means for generating a plurality of computer readable component codes respectively expressing the residues obtained by the residue calculating means; and

concatenating means for concatenating the <u>computer readable</u> component codes

generated by the <u>computer readable</u> component code generating means, thereby to generate

the <u>computer readable</u> code to be embedded.

3. (Original) A unit according to claim 2, wherein the component code generating

means generates, as the plurality of component codes, codes each constructed by continuous

sequences of 1 and 0, taking a predetermined number of bits as a unit.

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Currently Amended) A unit for generating a <u>computer readable</u> code to be

embedded, comprising:

calculating means for calculating a set of a plurality of integral elements in

correspondence with an inputted user identification number;

<u>computer readable</u> component code generating means for generating <u>computer</u>

<u>readable</u> component codes respectively in correspondence with the integral factors, such that

among k' <u>computer readable</u> component codes capable of expressing all sets of integral

elements that are calculated by the calculating means with respect to a predetermined number

of user identification numbers, k combinations of the k' <u>computer readable</u> component codes

can uniquely express the user identification numbers; and

concatenating means for concatenating the <u>computer readable</u> component codes

generated by the <u>computer readable</u> component code generating means, thereby to generate a

<u>computer readable</u> code to be embedded, wherein

k' is determined to be c(k+ℓ)/q or more where c is a positive integer of 3 or more, ℓ is

a positive integer, and q is a number of the integral elements which can be detected from each

of the <u>computer readable</u> component codes when detecting the <u>computer readable</u> embedded

code.

10. (Original) A unit according to claim 9, wherein, where p_i (i=1, 2, ..., k') is a

number of values which each of the integral factors calculated by the calculating means can

take with respect to the predetermined number of user identification numbers and where ϵ is a

detection error rate which is assumed when detecting the code to be embedded, k' is

determined such that a condition of

$$\left[1-\prod_{i=1}^{l}\left\{1-\left(1-\frac{1}{p_i}\right)^{c}\right\}\right]^{c(k+l)/2\,C_{k+l}\times 2^{k+l}} \geq 1-\frac{\varepsilon}{2}$$

is satisfied.

11. (Original) A unit according to claim 9, wherein the calculating means calculates a

set of residues, which take a plurality of integers relatively prime to each other as moduli, as

the set of integral elements, in correspondence with the inputted user identification number.

12. (Original) A unit according to claim 9, wherein the calculating means calculates a set of numbers of elements, which belong to an equivalence class defined by a parallel transformation, as the set of integral elements, in correspondence with the inputted user identification number.

13. (Original) A unit according to claim 9, wherein the calculating means calculates a set of numbers of elements, which belong to an equivalence class defined by a parallel transformation, as the set of integral elements, in correspondence with the inputted user identification number, and

where p_i (i=1, 2, ..., k') is one same positive integer p, a condition of

$$k' = \frac{c}{2}(k+l) \le \frac{p^k - 1}{p - 1}$$

is further satisfied.

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Original) A unit according to claim 2, further comprising user identification number assigning means for selecting one candidate that is erroneously detected as the user

identification number of the colluder at a smaller possibility, among a plurality of user candidate number candidates, in response to an assigning request for the user identification number, and for assigning the selected user identification number to user specifying data which specifies the user.

21. (Original) A unit according to claim 20, wherein the user identification number assigning means inputs sequentially the plurality of user identification number candidates one after another, determines whether the possibility at which each of the candidates is erroneously detected as the user identification number of the colluder is high or low, and assigns a candidate to the user specifying data at a time point when a user identification number candidate having the possibility is determined to be low is inputted.

22. (Original) A unit according to claim 20, wherein the user identification number assigning means includes storage means which stores a plurality of user identification numbers having a lower possibility at which the plurality of user identification numbers are erroneously detected as the user identification numbers of the colluder, and selects and reads a user identification number to be assigned to the user specifying data from the user identification numbers stored in the storage means.

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Original) A watermark embedding unit for embedding a code to be embedded, which is generated by the unit according to claim 2, as watermark information into the content.

29. (Canceled)

30. (Canceled)

31. (Canceled)

32. (Currently Amended) A computer readable storage medium which stores a content in which a computer readable code to be embedded, which is generated by the unit according to claim 2, is embedded.